

## PERSPECTIVES ON U.S. ARMY PHYSICAL REQUIREMENTS: PROBLEMS AND CURRENT APPROACHES TO SOLUTIONS

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### SYMPOSIUM ABSTRACT

#### Overview

Of the various types of occupational standards (e.g., cognitive, formal education, manual dexterity) two of the more important considerations for military operations are physical demands and anthropometric characteristics. Fifty-seven percent of Army entry level jobs have a physical demands rating of heavy or very heavy (i.e., occasional lifting of 100 or more pounds, & frequent or constant lifting of 50 pounds). Also, the issue of fit is important given that current assignment opportunities for women have greatly increased, and given that typically the design envelope on a given dimension for most equipment has been the 5th to 95th percentile male. Inadequate matching of personnel capabilities and task assignments results in increased costs in the form of supplemental training, inadequate performance, and work-related injuries.

#### Summary of the Four Presentations

In order to address these issues, the mismatches in physical demands and anthropometric design parameters must first be clearly defined. The first two presentations in this symposium address these issues. The initial presentation demonstrates an occupation specific data base management system which can be used to assist research efforts, identify jobs most in need of redesign, and set training and performance standards. The second presentation describes a research effort that identifies anthropometric dimensions of military clothing, equipment, and workstations and the level of compatibility (height-reach characteristics) of these fielded systems with female soldier anthropometrics.

Once the potential problems are clearly defined, remedial methods must be explored. Task/equipment redesign, personnel selection, and training are methods typically suggested for addressing ergonomic issues and enhancing job performance. Two of these key methods are addressed in this symposium. The third

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presentation discusses physical training issues, including general versus task-specific training regimens and their potential influence in improving military performance, increasing soldier safety, and decreasing attrition. The final presentation describes a procedure for identifying, evaluating, and redesigning physically demanding tasks and equipment. This solution is the recommended procedure for ensuring soldier safety by designing a task to eliminate the hazard itself.

### *Project Goals*

This symposium follows an ergonomic systems approach of analyzing the problem, designing and implementing appropriate interventions and establishing methods for evaluating the effectiveness of those interventions (e.g., analyzing cost-benefit tradeoffs of potential implementations). By closely matching job demands with human capabilities and limitations, the ability of all soldiers to perform their duties is enhanced. The goals of these projects and similar military research efforts represent a unified approach to enhance personnel utilization, sustain performance, and ensure the health and safety of our service members.

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